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Abstract

Molecular Testing for Better Patient treatment Outcome

MR.Upendra Kaul
Kashmir University, India

Abstract:
Treating Cancer had always been big challenge to the Oncologist, Patient and care givers. For almost a decade treatment offered was based on approved chemotherapy regimens with or without radiation therapy. The chemo regimens would consist of two or three chemo drugs to achieve cumulative effect but oncologists would face daunting task in managing the drug related side effects. Perhaps the premises of " One Size fits all" was working but side effects would take toll of psychological effect and long time to recover from side effect even after getting rid of disease. With the advent of sequencers (Sanger & NGS) and RTPCR'S , the thought process of " One size Fits all" got changed to " One size does not fits All" and started to stress on the individual treatment. Here the NGS played big role in sequencing Single Cell to Number of Genes (eg Hotspot Panels) which bore the result in just 5-7% of Patient, but seeing the positive impact on those patients resulted in researcher to think and individualise Diagnosis and treatment. So bigger panels were planned having more number of genes to analysis; bore results. Researchers felt Job is half done; this sets the realisation that deep Gene Investigations would help addressing the root cause of disease, better response, faster recovery and minimal side effects. So today we have Gene/Sub-Gene Mutation information's and treatment plans. Today with efforts of the researchers we have reached to stage wherein we are able to address and obtain in one go; case in point is Lung Cancer, previously oncologists used to order single gene testing Like EGFR-ALK- KRAS-ROS1-C-Met, but the information's would come in pieces. But NGS has helped doctors to analysis in one go. Not only all actionable genes are analysed in one go but you too get information on Fusion genes, like wise we have such panels for other cancers. All these efforts have led to better patient outcome and faster recovery and disease free. We have moved from Platinum /Non Platinum based chemo to the oral chemotherapy to Targeted Therapies to Immunotherapy so on. NGS has opened doors for lot of research to address the cancer in better way, now looking at all the treatment options, Oncologists are more and more using composite Panel Of 500 Genes+ TMB+ PDL1+ MSI to weigh applicability treatment options. Now the researchers are focusing on Liquid Biopsy with twin intention, One to help those patients who don't have tumour tissue and secondly to those who don't want to undergo new biopsy because of economic cost involved in the hospitalizations. CTC, cf DNA , ct DNA are becoming more and more in use because it is proving its relevance. CTC is good progressive bio mark and help the oncologist to measure response to the treatment It has been approved in Breast, Prostate and Colon cancers. Cf DNA, ctDNA has proved its relevance in breast, lung and other cancers and is not at all painful to the patients

Unfortunately not much experience and data is available but usage is picking up.

Biography:

Has Done Msc –Biology from Kashmir University, Trained in Oncology by Ortho Diagnostics.

Undergone training In Human Genomics at Asia Pacific School of Oncology and Nursing , Malaysia

Done PGDMSM- from institute of management studies < New Delhi

Worked with Johnson & Johnson, Quest Diagnostics, Datar Cancer Genetics, and Founder of Star Genetech Health

Recent Publications:

- Klemperer JD, Klein I, Gomez M, et al. Thyroid hormone treatment after coronary artery bypass surgery. N Engl J Med. 1995; 333: 1522–1527.CrossrefMedlineGoogle Scholar
- 8 Murzi B, Iervasi G, Masini S, et al. Thyroid hormones homeostasis in pediatric patients during and after cardiopulmonary by-pass. Ann Thorac Surg. 1995; 59: 481–485. CrossrefMedlineGoogle Scholar
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